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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/787,432

Filing Date: February 26, 2004

Appellant(s): SCHILLING ET AL.

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Kevin L. Daffer  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/03/08 appealing from the Office action mailed 7/25/08.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

7,072,289	Yang et al	7-2006
5,793,318	Jewett	8-1998
5,007,088	Ooi et al.	4-1991

4,835,517

van der Gracht et al.

5-1989

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang et al US Patent no. 7,072,289.

As per claim 1, Yang discloses a system fig. 8 and fig. 9 comprising first unit fig. 8 and a second unit fig. 9, wherein the first unit fig. 8 is configured to transmit digital signals to the second unit fig. 9, the first unit fig. 8 comprising: a DFT 81 (data transmitter) for emitting first digital signals within first time intervals see fig. 5B; a pseudo random-generator 83 for generating pseudo random values , respectively see fig. 5A; , a MUX 85 (combining unit) for combining the first digital signals fig. 5B with the pseudo random values fig. 5A at substantially the entirety of intervals in which the first digital signals are absent see fig. 2A; note that the MUX 85 inherently includes a control circuit for generating a control signal to combine signals of fig. 5A and fig. 5B into a combined

signal 2A where pseudo random values are transmitted at times other than when the digital signals are present; and the second unit comprising a data receiver connected to the data transmitter by a transmission path see figs. 8 and 9.

As per claim 6, Yang et al shows at the second unit a PN processor 95 for generating "control" signal to be provided to the remover 97. Note that the control signal has to be a PN sequence because in order for the removing circuit to remove the PN code from the receive spread spectrum signal, it has to be provided with the same copy of the PN code used in the transmitter.

As per claim 12, see claim 1. In addition, as shown in fig. 2A the spectrum of the signal to be transmitted, gap between the spectral lines are reduced, so that amplitudes of the spectral lines are decreased however without substantially increasing the entire bandwidth needed for transmission see figs. 5A, 5B and 2A.

As per claim 13, see claim 1.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al US Patent No. 7,072,289.

As per claim 2, as applied to claim 1 above, Yang teaches every feature of the claimed invention but do not explicitly teach a signaling line is provided between the

data transmitter and the data receiver to signal the presence of data to the receiver. However, it is well known in the art to notify a receiving entity that signal is being transmitted using a control signal line. Given that fact, it would have been obvious to one skill in the art to incorporate a control line in Yang to transmit a control signal from a transmitting unit to a receiving unit to indicate that the data is being transmitted to the receiving unit in so as to provide the receiving unit with the proper timing as to when to commence signal processing in order to retrieve original signal.

Claims 5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al US Patent No. 7,072,289 in view of Jewett US Patent No. 5,793,318.

As per claim 5, as applied to claim 1 above Yang teaches every feature of the claimed invention but does not teach the further limitation of providing an additional transmission path for transmitting the pseudo random values or random values is provided, so that at the second unit a combination with the pseudo random values or random values takes place synchronously with a combining with the pseudo random values or random values at the first unit. Jewett teaches an additional transmission path 34 is provided to transmit the pseudo random values so that a combination with the pseudorandom values takes place synchronously with a combining with the pseudo random values at the first unit. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in yang so as to enhance signal processing at the second unit so that accurate reconstruction of the original signal can be carried out.

As per claim 7, as applied to claim 6 above, Yang teaches every feature of the claimed invention but does not explicitly teach the additional limitation of providing additional transmission path is provided for synchronizing the pseudo random generator or random generator of the first unit and the pseudo random generator or random generator of the second unit. Jewett further teaches an additional transmission path for synchronizing PN generator 44 and PN generator 62 see fig. 3. Given that fact, it would have been obvious tone skill in the art to incorporate such a teaching in Yang and the reason to do so would have been the same as provided above with respect to claim 5.

As per claim 8, as applied to claim 6 above, Yang teaches every feature of the claimed invention but does not explicitly teach the additional limitation recited in claim 8. Jewett teaches a unit 42 to synchronize both PN generators of the first and second units see fig. 3. Given that fact, it would have been obvious tone skill in the art to incorporate such a teaching in Yang and the reason to do so would have been the same as provided above with respect to claim 5.

As per claim 9, see claim 8. The combined references do not teach a sync sequence is used at the beginning of each signal transmission instead of the pn-sequence. Note however that it is well known that prior to transmitting data from one station to another station, signal synchronization is first established between the stations communicating. Given that fact, it would have been obvious to one skill in the art to send a sync sequence prior to signal transmission so as to synchronize the pseudo random generators so as to allow both units to be able to communicate and to allow the receiver to be able to decode the signal transmitted by the transmitter.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al US Patent No. 7,072,289 in view of Jewett US Patent No. 5,793,318 and further in view of Ooi et al US patent No. 5,007,088.

As applied to claim 10 above, Yang and Jewett disclose every feature of the claimed invention but do not explicitly teach the additional limitations wherein for the synchronization sequence, the data transmitter is adapted to emit a previously established bit pattern which is then combined with pseudo random values of the pseudo random generator of the first unit by the combining unit connected on an output side of the pseudo random generator; and a control unit of the data receiver is adapted to perform at various times a synchronization of the pseudo random generator of the second unit with the received data until a known given transmission pattern occurs as a result of the combination. Ooi et al teaches limitations wherein for the synchronization sequence, the data transmitter fig. 1 is adapted to emit a previously established bit pattern (unique word, see output of circuit 5) which is then combined with pseudo random values of the pseudo random generator 9 using gate 10 of the first unit fig. 1 by the combining unit 10 connected on an output side of the pseudo random generator 9; and a control unit 22 of the data receiver is adapted to perform at various times a synchronization of the pseudo random generator 25 of the second unit fig. 3 with the received data until a known given transmission pattern (unique word) occurs as a result of the combination. It would have been obvious to one skill in the art to incorporate such a teaching in Yang and Jewett in order to allow valid scrambling/descrambling of data to

occur immediately following the establishment of frame synchronization to prevent a substantial amount of data loss as taught by Ooi see col. 1, lines 34-38.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al US Patent No. 7,072,289 in view of Jewett US Patent No. 5,793,318 and further in view of Ooi et al US patent No. 5,007,088 and further in view of Van der Gracht et al US patent No. 4,835,517.

As applied to claim 10 above, Yang, Jewett, and Ooi teach the invention as claimed but do not teach the limitations of “wherein for simplified synchronization between the data transmitter and the data receiver, a short pseudo random sequence is used at first, and after a given period of time, or after a synchronization with this random sequence, a switch-over is made to a longer pseudo random sequence”. However, as evidence by Van Der Gracht et al, it is well known in the art to use a first short code sequence and a second long code sequence see col. 1, lines 62-66. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Yang, Jewett, and Ooi in order to acquire and maintain code synchronization between the receiver and transmitter so as to reduce error rate.

#### **(10) Response to Argument**

Applicant's arguments filed 9/25/08 have been considered with the following effects:

With respect to the art rejections, applicant argues that “ Yang describes placing pseudo-random or pseudo-noise (PN) sequences between DFT blocks or frame bodies.

However, each block or frame body contains data and non-data header information. Since Yang only teaches places PN between blocks, the header information within each block, exclusive of the payload data, does not contain PN values. Therefore, Yang cannot teach placing pseudo-random values in substantially the entirety in which digital data signals are absent. In fact, Yang describes not placing PN values in the header portion of DFT, where data of the payload is absent.” Applicant’s comment is not understood since at col. 6, lines 11-13, Yang et al clearly teaches that DFT/FFT block 81 convert a received data into a digital format. And further fig. 2A and fig. 2B show a plurality of such digital data generated by block 81 that correspond to applicant claimed “digital signals”. Besides, examiner notes that there is nothing in the applicant’s claimed invention and corresponding disclosure that would preclude non-data information such as header information from being associated with the data portion or payload. The claims only recite **“digital signals”**, which is also disclosed by Yang et al, see col. 6, lines 11-13 and fig. 8, output of block 81. In addition, the examiner notes that even if the claims were limited to “data payload”, which they are not, the claims would still be rejected as being obvious in view of Yang et al because one skill in the art at the time of the invention would have recognized that in an environment where framing or packetizing of the data would not be required, no non-data information would have been associated with the data portion or payload.

Applicant argues that the critical period is roughly 3 months –between June 1, 2001 and August 30, 2001 in which the inventors was busy preparing and filing the priority German application and that the request from the examiner for additional factual

evidence is without merit. However, applicant argument is not consistent with page 3 sections 8-10 of the declaration (with emphasis added on section 10) in which the inventors alleged during the **critical time period** (extending from a time just prior to June 1, 2001 through the date of constructive reduction to practice (August 30, 2001)) they were busy working on the ideas set forth in Exhibits A and B by **building, testing, experimenting with, and generally improving the operation of the invention**. In addition, the Examiner note that **no evidence of facts with actual dates of acts relied on to establish diligence are provided** per MPEP 715.07(a) and 715.07[R-3](II). Exhibit B is the only evidence provided to show diligence. However, Exhibit B made reference to "**unlimited claim to your service invention**". This is not an indication of being diligence.

Applicant contends that Exhibit A page 6, lines 11-24 provides support for combining or inserting pseudo-random values in substantially the entirety in which digital data signals are absent. Such point of argument is convincing. Accordingly, Exhibit A is sufficient to establish conception of the invention prior to the effective date of the Yang et al reference.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jean B Corrielus/

Primary Examiner, Art Unit 2611

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